

REMARKS

Claims 1-27 remain in the application.

By the foregoing Amendment, the Cross-Reference to Related Applications is updated. Claims 1 and 15 are amended to include text formerly recited in Claims 4 and 18, respectively, as originally filed. Formal amendments are made to Claims 19 and 26. Thus, these changes are believed not to introduce new matter, and entry of the Amendment is respectfully requested.

Based on the above Amendment and the following Remarks, Applicant respectfully requests that the examiner reconsider all outstanding objections and rejections, and withdraw them.

The October 13, 2004 Office Action

In the Office Action dated October 13, 2004, the examiner objected to the abstract as containing more than 150 words. Also, the examiner rejected all pending Claims 1-27 under 35 U.S.C. § 103 as being unpatentable over three or four references.

Objection to the Disclosure

By the foregoing Amendment, Applicants amend the Abstract to have no more than 150 words. Support for the text that is added may be found, for example, in Claim 4 as originally filed (see also the middle paragraph of page 49). Accordingly, the Abstract is believed to conform to all PTO regulations and examiner requirements. Therefore, reconsideration and withdrawal of the objection to the disclosure are respectfully requested.

Rejection under 35 U.S.C. § 103

Claims 1, 2, 4, 8-19, 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,747,968 (Seppala) in view of U.S. Patent No. 6,411,611 (Van der Tuijn), and further in view of U.S. Patent No. 6,741,576 (Alimi). These three references were further combined with U.S. Patent No. 6,760,318 (Bims) to reject the remaining dependent claims.

Applicants respectfully traverse the rejections, submitting that the claims, even before the foregoing amendment, patentably distinguished over the cited references.

Briefly, independent Claims 1 and 15 are directed to a method and system involving a *multipoll* frame, which is an improvement over a conventional poll frame (more on this below). As is well understood by those skilled in the art, a poll frame is a particular type of frame that helps to set up subsequent communications between stations. As such, a poll frame is a *control* frame as distinguished from a *data* frame.

However, concerning Claim 1's recitation of a multipoll frame, the Office Action merely states:

Seppala does not explicitly disclose sending a multipoll frame from the PC station. However, van der Tuijn discloses a time-slotted access to a wireless medium (col 1 ln 40-45). Time is slotted into twenty-four slots, where each slot is of duration 10 ms. The standard also allows slots of differing lengths including half slots of data and double slots of data. The slotted frame structure is shown in Fig. 2, exemplifies a time division multiple access (TDMA) structure (col 4 ln 44-51). Each slot represents a TO and may be assigned to communication devices to access the entire bandwidth for the duration of the slot time. Thus, the frame structure shown in Fig. 2 can represent a multipoll frame (col 4 ln 52-53). (emphasis added)

Whereas the Office Action is correct in acknowledging Seppala does not disclose sending a multipoll frame, the Office Action is incorrect in asserting that van der Tuijn does disclose such. In fact, the Office Action merely states that van der *Tuijn's* FIG. 2 frame structure "can" represent a multipoll frame.

Applicants do not acquiesce in this unsubstantiated assertion from the Office Action. Applicants note that a text search of the van der Tuijn patent text, taken from the PTO web site, resulted in *zero* occurrences of the text string "poll". Moreover, the portions of the van der Tuijn patent to which the Office Action refers, in fact refer to a common TDMA arrangement for *data* frames, not for *control* frames such as poll frames. Thus, the examiner is improperly employing hindsight reconstruction of Applicants' own invention in asserting that van der Tuijn represents, or "can" represent, a poll frame, much less a multipoll frame as required by Claim 1.

Thus, because neither Seppala nor van der Tuijn separately teaches a multipoll frame, even if van der Tuijn were somehow combined with Seppala, the resulting combination would not affirmatively teach or suggest a *multipoll* frame as required under 35 U.S.C. § 103. Alimi is cited for other reasons, and in any event does not appear to even contain the text string "poll". Accordingly, the rejection is believed to be improperly asserted against Claim 1 as originally filed.

Thus, it is believed to be clear the Claim 1 as originally filed clearly and patentably distinguishable over the cited art. Nevertheless, to expedite prosecution and clarify the language of the claims, Applicants amend Claim 1 to recite some of the text that was formerly recited in Claim 4. Claim 1 now recites:

sending a multipoll frame containing information relating to at least two allocated TOs from the PC station containing information relating to each allocated TO, the multipoll frame identifying each respective allocated TO by a duration time and one of a virtual stream identifier (VSID) and an association identifier (AID).

The text that is added to Claim 1 explains the nature of the present *multipoll* frame, as distinguished over convention poll frames.

The distinction between Applicants' multipoll frame and conventional poll frames is not merely formal, but represents a substantial advance in the art. In particular, one advantage of this multipoll frame is explained in the middle paragraph of page 49 as originally filed:

The present invention provides a technique for implementing multipoll over a QoS-driven WLAN that allows for transmissions from a *sequence* of virtual up-streams (VUSs) and virtual side-streams (VSSs) at one or more stations *by a single poll*. According to the invention, such a multipoll scheme *extends the conventional simple poll scheme that allows for transmission from only one station per poll, as defined by IEEE P802.11/1999*, thus greatly improving bandwidth utilization efficiency of wireless medium. The approach of the present invention is particularly useful when direct station-to-station communication is involved because data frames need not to be sent to a PC/AP first and then back to the destination station(s). (emphasis added)

That is, by setting up a *sequence* of streams per poll (rather than a single stream as in conventional polling frames), a single multipoll frame may be sent, rather than a sequence of conventional poll frames. This reduction in the number of polling frames conserves bandwidth, increasing bandwidth efficiency.

This arrangement is distinct from the polling arrangement of Seppala, who merely discloses “weighted polling factors” denoting a number of times each WLAN terminal is to be polled. Thus, if anything, Seppala actually *teaches away from* the invention by implying *multiple* polling operations must take place, rather than a single *multipoll* as claimed. Thus, Seppala does not disclose, teach or suggest a single multipoll frame enabling plural streams to be set up.

Concerning Claim 4 (the source of the text that has been added to independent Claim 1), the Office Action merely states:

Regarding claim 4, the combined method of Seppala, Van der Tuijn and Alimi discloses all aspects of the claimed invention set forth in the rejection of claim 1, and Seppala further teaches a weighted polling-list (Fig. 4), listing the TO of MTs. Each successive TO starts after a proceeding TO has completed. The preceding TO complete when the time duration associated with its time-slot has completed its duration.

The Office Action thus appears to focus on the timing of successive TOs, and not on the existence of a multipoll frame in the first place. Thus, nothing in the Office Action controverts Applicants' observations presented above. In view of the foregoing, it is respectfully submitted that Claim 1, especially as amended above, clearly and patentably distinguishes the invention over the cited art, considered either individually or in any reasonably motivated combination.

Independent Claim 15 recites limitations argued for above, and thus Claim 15 should be allowable for the same reason that Claim 1 is allowable. (Claim 15 has been amended to include some of the text that was recited in Claim 18 as originally filed.) Furthermore, all dependent Claims 2-14 and 16-26 incorporate the limitations of Claims 1 and 15, respectively, and thus should be allowable for at least the same reasons that Claims 1 and 15 are allowable. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103 of all pending claims are respectfully requested.

Information Disclosure Statement (IDS)

Applicants submit an Information Disclosure Statement (IDS) listing references recently cited in related applications (see pages 1-2 of specification). Consideration of the IDS is respectfully requested.

Drawings

Applicants respectfully request that the examiner affirmatively indicate in the next Office Action that the formal drawings filed with the case have been approved.

Change of Correspondence Address; New Associate Attorney

A "Revocation of Associate Power and Appointment of Attorney and Change of Correspondence Address" is filed herewith. The Appointment recognizes the undersigned

attorney to prosecute the case. It is requested that the examiner verify that the address information has been entered into the PTO mailing system so that future communications will be mailed to the correct address.

Conclusion

All objections and rejections have been complied with, properly traversed, or rendered moot. Thus, it now appears that the application is in condition for allowance. Should any questions arise, the examiner is invited to call the undersigned representative so that this case may receive an early Notice of Allowance.

Favorable consideration and allowance are earnestly solicited.

Respectfully submitted,

By: 

Date: January 13, 2005

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